

## Amendment and Response

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Serial No.: 09/847,942

Confirmation No.: 6169

Filed: 2 May 2001

For: PRESSURE SENSITIVE ADHESIVE FIBERS WITH A REINFORCING MATERIALAmendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the above-identified application:

1. (Currently Amended) A pressure sensitive adhesive fiber comprising:  
a pressure sensitive adhesive component; and  
a minimicrofibrous an organic polymeric reinforcing material comprising a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns within the pressure sensitive adhesive component;  
wherein the pressure sensitive adhesive fiber comprises about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of minimicrofibrous organic polymeric reinforcing material based on a total weight of the pressure sensitive adhesive fiber, and further wherein a nonwoven web comprising the pressure sensitive adhesive fiber and having a basis weight of about 55 g/m<sup>2</sup> has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.
2. (Currently Amended) The pressure sensitive adhesive fiber of claim 1 wherein the minimicrofibrous organic polymeric reinforcing material comprises substantially continuous in-situ formed minimicrofibers.
3. (Original) The pressure sensitive adhesive fiber of claim 1 wherein the nonwoven web comprising the pressure sensitive adhesive fiber has an elongation at break of at least about 200% at a basis weight of about 55 g/m<sup>2</sup>.
4. (Original) The pressure sensitive adhesive fiber of claim 1 wherein the nonwoven web comprising the pressure sensitive adhesive fiber has a maximum load of at least about 50 g/cm at

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a basis weight of about 55 g/m<sup>2</sup>.

5. (Original) The pressure sensitive adhesive fiber of claim 1 wherein the nonwoven web comprising the pressure sensitive adhesive fiber has a load at yield point of no greater than about 100 g/cm at a basis weight of about 55 g/m<sup>2</sup>.

6. (Original) The pressure sensitive adhesive fiber of claim 1 comprising about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of minimicrofibrous organic polymeric reinforcing material.

7. (Currently Amended) The pressure sensitive adhesive fiber of claim 1 wherein the ~~minimicrofibrous organic polymeric reinforcing material comprises at least one minimicrofibers~~ having have a diameter of no greater than about 5 micrometers.

8. (Currently Amended) The pressure sensitive adhesive fiber of claim 1 wherein the ~~minimicrofibrous organic polymeric reinforcing material comprises at least one minimicrofibers~~ having have an aspect ratio of greater than about 1000.

9. (Original) The pressure sensitive adhesive fiber of claim 1 wherein the pressure sensitive adhesive component comprises synthetic rubber, styrene block copolymer, polyvinyl ether, poly(meth)acrylate, polyolefin, silicone, or combinations thereof.

10. (Original) The pressure sensitive adhesive fiber of claim 1 wherein the pressure sensitive adhesive component comprises a crosslinked acrylate copolymer, wherein the crosslinked acrylate copolymer comprises copolymerized monomers comprising at least one monoethylenically unsaturated alkyl (meth)acrylate monomer, at least one monoethylenically

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unsaturated free-radically copolymerizable reinforcing monomer having a homopolymer glass transition temperature higher than that of the alkyl (meth)acrylate monomer.

11. (Original) The pressure sensitive adhesive fiber of claim 10 wherein the crosslinked acrylate copolymer is derived from a melt-processable acrylate copolymer and a crosslinking agent, wherein the crosslinking agent crosslinks subsequent to fiber formation or is a thermally reversible crosslinking agent.

12. (Original) The pressure sensitive adhesive fiber of claim 11 wherein the crosslinking agent is a styrene macromer.

13. (Original) The pressure sensitive adhesive fiber of claim 10 wherein the alkyl (meth)acrylate monomer when homopolymerized has a glass transition temperature of no greater than about 0°C, and wherein the free-radically copolymerizable reinforcing monomer when homopolymerized has a glass transition temperature of at least about 10°C.

14. (Previously Presented) The pressure sensitive adhesive fiber of claim 10 wherein the pressure sensitive adhesive component comprises a polymer derived from at least one alkyl (meth)acrylate ester monomer selected from isooctyl acrylate, 2-ethyl-hexyl acrylate, and n-butyl acrylate, and at least one monomer selected from the group consisting of acrylic acid and acrylamide.

15. (Original) The pressure sensitive adhesive fiber of claim 1 wherein the minimicrofibrous organic polymeric reinforcing material comprises an elastomer having a yield strength of no greater than about 20 MPa and a tensile strength of at least about 150% of the yield strength.

16. (Original) The pressure sensitive adhesive fiber of claim 1 wherein the minimicrofibrous

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organic polymeric reinforcing material comprises a semi-crystalline polymer.

17. (Currently Amended) A pressure sensitive adhesive fiber comprising:  
a pressure sensitive adhesive component; and  
a reinforcing material comprising a metallocene-catalyzed polyolefin within the pressure sensitive adhesive component;

wherein the reinforcing material comprises a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns;

wherein the pressure sensitive adhesive fiber comprises about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of the reinforcing material based on a total weight of the pressure sensitive adhesive fiber, and further wherein a nonwoven web comprising the pressure sensitive adhesive fiber and having a basis weight of about 55 g/m<sup>2</sup> has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.

18. (Currently Amended) The pressure sensitive adhesive fiber of claim 17 wherein the reinforcing material ~~is in the form of one or more fibers or one or more layers~~ has a melting point above the use temperature of the fiber.

19. (Currently Amended) A pressure sensitive adhesive fiber comprising:  
a pressure sensitive adhesive component comprising a crosslinked acrylate copolymer, wherein the crosslinked acrylate copolymer comprises copolymerized monomers comprising at least one monoethylenically unsaturated alkyl (meth)acrylate monomer, at least one monoethylenically unsaturated free-radically copolymerizable reinforcing monomer having a homopolymer glass transition temperature higher than that of the alkyl (meth)acrylate monomer; and

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a reinforcing material comprising a metallocene-catalyzed polyolefin within the pressure sensitive adhesive component;

wherein the reinforcing material comprises a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns;

wherein the pressure sensitive adhesive fiber comprises about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of the reinforcing material based on a total weight of the pressure sensitive adhesive fiber, and further wherein a nonwoven web comprising the pressure sensitive adhesive fiber and having a basis weight of about 55 g/m<sup>2</sup> has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.

20. (Currently Amended) A pressure sensitive adhesive fiber comprising:

a pressure sensitive adhesive component; and

an organic polymeric reinforcing material within the pressure sensitive adhesive component, wherein the organic polymeric reinforcing material has a yield strength of no greater than about 20 MPa and an elongation at break of at least about 50%;

wherein the reinforcing material comprises a plurality of substantially continuous minimicrofibers having a diameter of no greater than about 10 microns;

wherein the pressure sensitive adhesive fiber comprises about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of the organic polymeric reinforcing material based on a total weight of the pressure sensitive adhesive fiber, and further wherein a nonwoven web comprising the pressure sensitive adhesive fiber and having a basis weight of about 55 g/m<sup>2</sup> has a maximum load of at least about 30 g/cm, which is at least about 150% of the load at yield point, and an elongation at break of at least about 50%.

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21. (Cancelled) }

22. (Original) A nonwoven web comprising the pressure sensitive adhesive fiber of claim 1.

23. (Original) A nonwoven web comprising the pressure sensitive adhesive fiber of claim 17.

24. (Original) A nonwoven web comprising the pressure sensitive adhesive fiber of claim 19.

25. (Original) A nonwoven web comprising the pressure sensitive adhesive fiber of claim 20.

26. (Original) A substrate comprising at least one surface having a nonwoven web of the pressure sensitive adhesive fiber of claim 1 disposed thereon.

27. (Currently Amended) The substrate of claim 26 ~~which~~ wherein the substrate is a release liner.28. (Currently Amended) The substrate of claim 26 ~~which~~ wherein the substrate is an extensible nonwoven web comprising fibers having at least two substantially continuous layers throughout the fiber length, wherein the layers comprise at least one first layer of a low modulus material and at least one second layer of a relatively nonelastic higher modulus material capable of undergoing substantial permanent deformation.29. (Currently Amended) The substrate of claim 28 wherein the layers of the fibers of the substrate are concentric.30. (Currently Amended) The substrate of claim 28 wherein the layers of the fibers of the substrate are longitudinally layered.

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31. (Currently Amended) The substrate of claim 28 wherein each fiber of the substrate comprises an outer sheath layer comprising the at least one first layer and at least one internal core layer comprising the at least one second layer.
32. (Original) The substrate of claim 31 wherein the outer sheath layer comprises a polyurethane.
33. (Original) A substrate comprising at least one surface having a nonwoven web of the pressure sensitive adhesive fiber of claim 17 disposed thereon.
34. (Original) A substrate comprising at least one surface having a nonwoven web of the pressure sensitive adhesive fiber of claim 19 disposed thereon.
35. (Original) A substrate comprising at least one surface having a nonwoven web of the pressure sensitive adhesive fiber of claim 20 disposed thereon.
36. (Original) A tape comprising  
a backing having a first and second side; and  
a nonwoven web comprising the pressure sensitive adhesive fiber of claim 1 disposed on at least a portion of the first side of the backing and, optionally, on at least a portion of the second side of the backing.
37. (Original) A tape comprising  
a backing having a first and second side; and  
a nonwoven web comprising the pressure sensitive adhesive fiber of claim 17 disposed on at least a portion of the first side of the backing and, optionally, on at least a portion of the

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second side of the backing.

38. (Original) A tape comprising:

a backing having a first and second side; and

a nonwoven web comprising the pressure sensitive adhesive fiber of claim 19 disposed on at least a portion of the first side of the backing and, optionally, on at least a portion of the second side of the backing.

39. (Original) A tape comprising:

a backing having a first and second side; and

a nonwoven web comprising the pressure sensitive adhesive fiber of claim 20 disposed on at least a portion of the first side of the backing and, optionally, on at least a portion of the second side of the backing.

40. (Original) A stretch removable article comprising the pressure sensitive adhesive fiber of claim 1.

41. (Original) A stretch removable article comprising the pressure sensitive adhesive fiber of claim 17.

42. (Original) A stretch removable article comprising the pressure sensitive adhesive fiber of claim 19.

43. (Original) A stretch removable article comprising the pressure sensitive adhesive fiber of claim 20.

44. (Original) A medical article comprising the pressure sensitive adhesive fiber of claim 1.



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45. (Original) The medical article of claim 44 which is in the form of a wound dressing, surgical dressing, medical tape, athletic tape, or surgical tape.
46. (Original) The medical article of claim 44 which is in the form of a sensor, an electrode, or an ostomy appliance.
47. (Original) A medical article comprising the pressure sensitive adhesive fiber of claim 17.
48. (Original) A medical article comprising the pressure sensitive adhesive fiber of claim 19.
49. (Original) A medical article comprising the pressure sensitive adhesive fiber of claim 20.
50. (New) A method for making a minimicrofibrous reinforced adhesive fiber, the method comprising:
- forming a molten mixture comprising a dispersion of a reinforcing material within a pressure sensitive adhesive;
  - subjecting the molten mixture to a shear and/or extensional flow using a single or twin screw extruder, no splitter, and a single port feed die under conditions effective to form a pressure sensitive adhesive melt-blown fiber comprising a plurality of substantially continuous minimicrofibers; and
  - quenching the pressure sensitive adhesive fiber.
51. (New) The method of claim 50 wherein the pressure sensitive adhesive fiber comprises about 60 weight percent to about 95 weight percent of the pressure sensitive adhesive component and about 5 weight percent to about 40 weight percent of minimicrofibrous organic polymeric

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reinforcing material based on a total weight of the pressure sensitive adhesive fiber.

52. (New) The method of claim 50 wherein the minimicrofibers have a diameter of no greater than about 10 microns.

53. (New) The method of claim 50 wherein the minimicrofibers have a diameter of no greater than about 5 microns.

54. (New) The method of claim 50 wherein the minimicrofibers have an aspect ratio of greater than about 1000.